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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/500,706	02/09/2000	Srinivasan K Ganapathi	61450/0261860	2981

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EXAMINER

DAVIS, OCTAVIA L

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 12/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/500,706

Applicant(s)

GANAPATHI, SRINIVASAN K

Examiner

Octavia Davis

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NW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 and 69-71 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 and 69-71 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 11 - 21 and 31 - 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito et al.

Regarding claims 1 and 21, Saito et al disclose a magnetoresistance effect element and a magnetoresistance effect sensor used in a magnetic field sensor comprising a substrate 31, 51, a ferromagnetic layer 32, a nonmagnetic layer 33, 35 and a magnetoresistive layer 34 wherein a resistance of the magnetoresistive layer changes upon an applied stress (See Cols. 11, 12, 23 and 24, lines 36 - 49, 14 - 28, 38 - 68 and 1 - 15, See Figs. 8 and 29c).

Regarding claims 11 and 31, the nonmagnetic conducting layer includes Ta (See Col. 12, lines 48 - 55).

Regarding claims 12, 14, 32 and 34, the ferromagnetic layer includes one of an alloy of NiFeCr and a laminated layer of CoTaZr and NiFeCr (See Col. 12, lines 32 - 37).

Regarding claims 13, 15, 16, 33, 35 and 36, the magnetoresistive layer including a nickel alloy (See Col. 12, lines 32 - 37).

Regarding claims 17 and 37, the thickness of each of the ferromagnetic biasing layer, the nonmagnetic conducting layer and the magneto resistive layer is within a specific range (See Cols. 7 and 12, lines 46 - 56 and 38 - 47).

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Regarding claims 18 - 20 and 38 - 40, an underlayer 33 is disposed between the support structure 31 and the ferromagnetic biasing layer 32, the underlayer being formed of Ta (See Fig. 8).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 – 10, 22 - 30 and 69 – 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al in view of Saitou (EP 0690296).

Regarding claims 2 - 10 and 22 - 30, Saito et al lack the support being a deformable beam and membrane and consisting of insulator layers and a conductor and having a length, thickness and width in a specific range. However, Saitou discloses a ceramic substrate 11 consisting of insulating layers 12, 13 and a conductive layer 15, the substrate having a specific length, width and thickness, stress being applied to the substrate 11 resulting in stress in the S-direction (See Pg. 4, lines 31 – 39 and 49 - 54).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made of modify Saito et al according to the teachings of Saitou for the purpose of, providing a support structure that is capable of supporting plurality of layers integrally (See Saitou, Page 2, lines 20 - 22).

Regarding claims 69 and 70, Saito et al lack the application of pressure being measured using a current. However, in Saitou, an electric current is utilized for sensing (See Pg. 5, lines 53 – 55).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made of modify Saito et al according to the teachings of Saitou for the purpose of, enhancing the degree of freedom (See Saitou, Col. 54 – 57).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 71 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al in view of Saitou, as applied to claims 1- 40, 69 and 70 above, and further in view of Suga.

Regarding claim 71, Saito et al and Saitou disclose all the limitations of these claims except for teachings that the sensors sense pressure applied to a fingerprint, including detecting ridges and valleys of the fingerprint. However, Suga discloses a fingerprint detection apparatus comprising a detection driving unit 104 for detecting the pattern of the fingerprint including detecting ridges and valleys of the fingerprint (See Cols. 9 and 15, lines 7 – 10 and 21 - 40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Saito et al and Saitou according to the teachings of Suga for the purpose of, detecting the different electrostatic capacities of concave and convex portions of a fingerprint configuration (See Suga, Cols. 2 and 3, lines 61 – 67 and 1 – 4).

Response to Arguments

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Response to Arguments

7. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Setlak et al (5,852,670) teaches a fingerprint sensing apparatus with finger position indication.

Kramer (6,408,087) teaches a capacitive semiconductor user input device.

9. Any inquiry concerning this communication should be directed to Examiner Octavia Davis at telephone number (703) 306 - 5896. The examiner can normally be reached on Monday - Thursdays (9:00 - 5:00), Fridays off.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz, can be reached on (703) 305 - 4816. The fax phone number for the organization where this application where this application or proceeding is assigned is (703) 746 - 4409.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 - 0956.

OD/2855

11/18/03


EDWARD LEFKOWITZ
SUPERVISORY PATENT EXAMINER
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